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Title: Barriers and facilitators to attendance at Type 2 diabetes structured education programmes

- A qualitative study of educators and attendees

Running Title: Attendance at diabetes structured education programmes in Ireland

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Conflicts of Interest

None declared

Novelty Statement

- This is the first time experiences and barriers and facilitators to attendance at Type 2 DM structured education programmes have been explored among educators and attendees
- Similar to a previous review we identified “Can’t Go” and “Won’t Go” reasons for non-attendance
- We also identified two new categories: “Don’t Know”- lack of knowledge of the existence and benefits of programmes and “Poor System Flow”- issues with healthcare system resources and lack of importance placed on education
- Healthcare professionals have an important role in promoting attendance
- Improving attendance may require education to be better embedded and supported within the diabetes care pathway

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Abstract

Aims

Attendance at structured diabetes education has been recommended internationally for all people with Type 2 diabetes mellitus (Type 2 DM). However, attendance rates are consistently low. This qualitative study aimed to explore experiences of attending and delivering Type 2 DM structured education programs in Ireland and barriers and facilitators to attendance.

Methods

People with Type 2 DM who had attended one of the three programmes delivered in Ireland and educators from the three programmes took part in semi-structured telephone interviews.

Interviews were audio-taped, transcribed and analysed using inductive thematic analysis.

Results

Twelve attendees and 14 educators were interviewed. Two themes were identified in relation to experiences of programme attendance and delivery: “Structured education: Addressing an unmet need” and “The problem of non-attendance”. The third theme “Barriers to Attendance: Can’t Go, Won’t Go, Don’t Know and Poor System Flow” outlined how practicalities of attending, lack of knowledge of the existence and benefits, and limited resources and support for education within the diabetes care pathway impacts on attendance. The final theme “Supporting attendance: Healthcare professionals and the diabetes care pathway” describes facilitators to participants’ attendance and the strategies educators perceived to be important in increasing attendance.

Conclusions

Healthcare professionals have an important role in improving attendance at structured diabetes education programmes. Improving attendance may require promotion by healthcare professionals and for education to be better embedded and supported within the diabetes care pathway.

Keywords: Education, Self-management, Health care delivery, Lifestyle

Introduction

The prevalence of diabetes, and associated health burden, is increasing worldwide (1). Type 2 diabetes mellitus (Type 2 DM), the most common type of diabetes accounting for approximately 90% of all diabetes (2), is a leading causes of cardiovascular disease , blindness, kidney failure and lower-limb amputation (1). The vast majority of diabetes care is managed by the person with diabetes themselves. On average a person with diabetes has only 3 hours of contact with their healthcare team per year; for the remaining 8757 hours, the person must equip themselves with the knowledge and skills to self-manage diabetes (3).

Structured diabetes education is an example of a self-management support strategy, which aims to facilitate people in developing the knowledge and ability to self-manage their diabetes through structured group-based courses (4). Structured programmes consist of an evidence-based curriculum delivered in groups by trained educators, and are regularly audited against quality assurance criteria (5, 6).

Structured diabetes education programmes positively impact on lifestyle, psychosocial and clinical outcomes in people with Type 2 DM (7, 8). Economic studies have also demonstrated that programmes are cost-effective relative to usual care (9). Consequently, structured diabetes education is recommended as a core component of diabetes care in international guidelines (6).

Despite demonstrated efficacy, and international recommendations, attendance at structured diabetes education is low globally (10, 11). In line with international evidence, Irish audit data indicates that the number of people attending is far less than the number of people newly

diagnosed each year (12). Consequently a research prioritisation exercise with people with diabetes, healthcare professionals and policy makers identified improving attendance at structured diabetes education programmes in Type 2 DM as a top priority for research in Ireland (13).

In Ireland, it is recommended that people attend one of the three programmes endorsed by the Irish Health Service Executive: the Community Oriented Diabetes Education (CODE) programme, the Diabetes Education and Self-Management for Ongoing and Newly Diagnosed (DESMOND) programme (14) and the X-PERT programme (15), should be available to all people with Type 2 DM at diagnosis (Forde et al. 2009). The CODE programme is facilitated by a diabetes nurse or dietician and two hour weekly sessions are run for three weeks. The DESMOND programme is delivered by two educators (typically a diabetes nurse and a dietician) and runs for six hours, usually delivered over two half-day sessions. The X-PERT programme is delivered by a dietician and two hour weekly sessions are run for six weeks. Programmes are run in local community or hospital venues across Ireland and all three programmes are available free of charge. The most recent audit in 2014 indicated that there are 11 CODE educators, 50 DESMOND educators and 59 X-PERT educators delivering programmes across Ireland.

People with Type 2 DM are typically referred to one of the programmes by their primary care team, or can self-refer to programmes advertised locally. Guidelines recommend that programmes should be available to all people with diabetes at diagnosis, although some people do not attend until later in their diabetes journey (4).

There has been an increased focus on understanding low attendance at programmes in recent years. A systematic review synthesized results from 12 studies (5 qualitative and 7 quantitative) exploring reasons people with diabetes had declined attendance (16). The authors identified two categories of non-attenders: “Can’t Go”, people who chose not to attend for logistical or practical reasons and “Won’t Go”, people who did not to attend for emotional or cultural reasons or because they perceived no benefit in attendance. Only people who had declined attendance at programmes were included in the papers synthesized in this review; the experiences of people who had attended were not explored.

The current study adds to the existing international evidence by exploring attendance from the perspectives of two additional key groups: people with Type 2 DM who have attended and programme educators. People who have chosen to attend provide an example of when the process has worked, while educators have an insight from both the day to day delivery of programmes and from a broader healthcare system perspective.

Study Aim

The current study aimed to explore experiences of attending and delivering Type 2 DM structured education programs in Ireland and barriers and facilitators to attendance through interviews with people with Type 2 DM who had attended, and educators who deliver, programmes in Ireland.

Methods

2.1 Design

A semi-structured qualitative interview study received ethical approval from the National University of Ireland, Galway Research Ethics Committee (ref: 15/DEC/06) and the Irish Primary Care Research Committee. The COnsolidated criteria for REporting Qualitative research (COREQ) checklist was used to guide reporting (17). A completed COREQ checklist for this study is shown in Appendix C.

2.2 Participants

For educator participants, the national coordinators from each of the three programmes were provided with an email invitation (including an information sheet and consent form as an attachment) to send to all educators. For people with Type 2 DM, national coordinators from each of the programmes were sent invitation packs (including an information sheet, consent form and FREEPOST envelope for return of consent to the research team) to post directly to people who had attended a programmes. A total of 230 invitation packs were sent to people with diabetes.

Educators and people with diabetes who were interested in taking part contacted JMS and were asked to provide demographic details. Maximum variation sampling was then used to obtain a varied sample of experiences. People with Type 2 DM were sampled based on differences in age, gender, years since diagnosis, programme attended and geographical location. Educators were sampled based on difference in programme delivered, years delivering structured education and geographical location. Participants were selected as ‘information-rich cases whose study will illuminate the questions under study’ and were not intended to be generalisable to a population

(18). Recruitment continued until an adequate level of ‘saturation’ had been reached and no new significant insights were emerging from interviews (19).

2.3 Procedure

Semi-structured telephone interviews were carried out by JMS, a female Health Psychologist and experienced qualitative post-doctoral researcher, between February and November 2016.

Interview guides (Appendix A and Appendix B) of open-ended questions focusing on experiences of programmes, and facilitators and barriers to attendance were used flexibly to guide the interviews. The interviewer had no previous relationship with participants and started each interview by providing a brief overview of the research team and the reasons for doing the research. Participants were encouraged to lead the flow of the interview and topics were followed up using non-directive general prompts. Only participants and researchers were present during the interviews. Interviews were audio-recorded, transcribed verbatim and checked for accuracy, but were not returned to participants for comment or correction. Transcripts were anonymized and imported into the software package QSR NVivo to facilitate data organisation, management and analysis. The memo-writing feature within NVivo was used to write up field notes following each interview and to create an audit trail of the decisions made throughout the study and to record the development of emerging codes and themes (20).

2.4 Data-analysis

Data were analysed without trying to fit codes and themes into a pre-existing coding frame following an inductive thematic analysis approach (21). Analysis was conducted from a subtle realist perspective; subtle realism acknowledges the subjective nature of knowledge while

maintaining a belief in the existence of an underlying reality that we attempt to represent through research (22).

Analysis began with data immersion as JMS listened to audio files and read and re-read the transcripts as interviews were completed. JMS and MB carried out line by line coding on two initial transcripts and then met to discuss the development of initial conceptual themes and sub-themes. These initial conceptual themes were then applied to subsequent transcripts. Continued analysis was conducted in parallel with ongoing data collection and codes, sub-themes and themes were modified and developed in line with new and alternative data. Participants were not involved in the analysis process or in confirming accuracy of transcripts and findings. A summary of findings was sent to all participants following analysis.

Results

Of 230 people with diabetes who were sent invitation packs, 50 (22%) expressed an interest in participating. Six replied to say they were not interested in taking part; no response was received from the remaining 174. Twenty one educators (18%), out of the total 120 educators in Ireland, expressed an interest in participating. Twelve people with diabetes and 14 educators were selected for interview. Interviews with people with diabetes lasted between 16 and 42 minutes, and educator interviews lasted between 32 and 69 minutes. Table 1 and Table 2 summarise participant characteristics and provide an indication of the variety in the sample.

Insert Table 1 here

Insert Table 2 here

Two themes were identified in relation to experiences of attendance and delivery: “Structured education: Addressing an unmet need” and “The problem of non-attendance”. The third theme “Barriers to Attendance: Can’t Go, Won’t Go, Don’t Know and Poor System Flow” describes barriers to their own attendance outlined by attendees, their views on why others might not attend, and educators’ views on reasons for non-attendance. The final theme “Supporting attendance: Healthcare professionals and the diabetes care pathway” describes facilitators to participants’ attendance and the strategies perceived to be important by educators in increasing attendance. Table 3 provides a visual overview of themes and sub-themes identified.

Insert Table 3 here

3.1 Structured education: Addressing an unmet need

People with diabetes were overwhelmingly positive about their experience of programmes and were unanimous in recommending that others should attend. Structured diabetes education filled an important information gap that people were not even aware of before attendance:

“There’s so much you can learn that you would never find out if you didn’t go”

(Attendee 1, CODE).

Structured diabetes education was particularly appreciated by participants with diabetes who felt information provided within routine care was “not really enough” (Attendee 5, CODE) or who had felt particularly shocked at diagnosis:

“So in my head like the world was after collapsing because I knew nothing about diabetes be it [type] 1, 2 or 5 or whatever, so it kind of took the wind from my sails”

(Attendee 8, X-PERT).

Many participants with diabetes described that information provided by healthcare providers during routine diabetes consultations was limited due to a focus on medication, rather than on education or lifestyle change.

“They used put you on tablets and that was it” (Attendee 1, CODE).

Education was also valued by people who felt overwhelmed by multiple sources of online information, as structured programmes were perceived to provide trusted information from a reliable source. Educators themselves were widely praised by attendees for their extensive knowledge, ability to convey information in an understandable way and expertise in putting groups at ease.

“I could have gone to Google but how do I know who writes for Google you know? You get a dozen million pages, like how do I know I am not reading the clown’s version you know... I much prefer to get it from a person that is qualified to talk about it”

(Attendee 11, X-PERT).

For people who already felt they were managing diabetes well, structured diabetes education provided reinforcement from a professional that “you are doing the right thing” (Attendee 5, CODE). The group nature was also valued as “you’re still going to learn something from the other people with questions. You mightn’t necessarily have to open your mouth” (Attendee 12, DESMOND). The experience of others provided reassurance that it was possible to live a normal life with diabetes, or highlighted an opportunity to act now to avoid future complications.

The perceived benefits were echoed by educators, who felt structured diabetes education was the best way to support people to self-manage Type 2 DM as “the quality of the information is much better rather than just a one-to-one where you’ve got 15, 20 minutes with the patient” (Educator 6, X-PERT).

3.2 The problem of non-attendance

Despite educators’ and attendees’ positive perceptions, educators confirmed that non-attendance is a problem in Ireland. Low attendance rates were described with reference to the increasing prevalence of diabetes:

“If you check the stats on diabetes, we’re only scratching the surface”

(Educator 6, X-PERT)

Educators reported attendance rates of approximately 20% among people with diabetes; when recruiting through general practice lists they would “send 60 to 70 letters to get sixteen” (Educator 1, CODE). Educators felt that “actually getting patients in the door, kind of at the outset that’s the challenge” (Educator 8, X-PERT), and that generally attrition from programmes was not a problem.

3.3 Barriers to Attendance: Can't Go, Won't Go, Don't Know and Poor System Flow

3.3.1 Can't Go, Won't Go: Practical Barriers and Attitudes

Both people with diabetes and educators made reference to barriers in line with the “Can't Go” “Won't Go” categories previously identified in the literature (16). “Can't Go” practicalities of when and where courses took place were described as a barrier to attendance. For one participant, who had considered not attending, having to be absent from work was the main reason for an initial reluctance to attend.

“Just coming from why I was thinking I wouldn't go was just that it didn't fit in. I knew I needed it...But it was really just the timing and the inconvenience, that I would have to take time off work” (Attendee 4, DESMOND)

“Won't go” factors including participant's attitudes, dislike of groups, and the non-symptomatic nature of diabetes were described as barriers to attendance by educators, and as reasons why others might not attend by attendees. Two participants (Attendee 8, X- PERT and Educator 14, X-PERT) described how some people might not want to admit to themselves that they had diabetes, and described this denial as an “Irish thing”, implying that this issue was particular to the Irish context.

We identified two additional categories of barriers identified by attendees and educators: “Don't Know”- lack of knowledge of the existence and benefits of education and “Poor System Flow”- issues with healthcare system resources and the lack of importance placed on education as an integral part of diabetes care. As described by Educator 4 (CODE) “perhaps it's not so much the

participant not wanting to come, it's more the importance where education sits in the structure...so if you have a GP or a nurse committed, I think they are well able to sell it!"

The following two sections will focus on these "Don't Know" and "Poor System Flow" barriers to attendance as these have not previously been highlighted in the existing literature (16).

3.3.2 Don't Know: Lack of knowledge of existence and benefits

Not knowing of the existence of structured diabetes education, or the benefits of attendance, were identified as a key barriers to attendance.

"Some people just don't know about it." (Attendee 5, CODE)

"They mightn't know the benefits of it until they actually do it" (Educator 1, CODE)

Educators highlighted how lack of awareness among people with diabetes sometimes reflected healthcare professionals' lack of knowledge of both the existence and benefits which led to people not being told about programmes and referrals only coming from certain GP practices.

"there's still a lot more people out there being diagnosed aren't being referred to us, that's what I think possibly the issue is, you know, we're getting the same pockets of GP practices all the time" (Educator 10, X-PERT)

Educators also described the detrimental impact if healthcare providers don't emphasis the benefits of attendance:

"If they are not promoting it, it is hard to get a buy-in from the participants
(Educator 1, CODE)

3.3.2 Poor System Flow: Limited resources and perceived importance

Educators described how limited administrative support and staff time for the practicalities of sending invites and reminders and organising sessions impacted on attendance:

“Admin support, the lack of it, is the next biggest challenge. I’m seeing patients and I organise most of our classes, and it’s so time consuming” (Educator 9, DESMOND)

Educators also described how education is not embedded as a standard part of diabetes care, making it difficult for people with diabetes to appreciate its importance and “to understand that this is not an optional extra, if you like. That it is part of their treatment plan that they would attend a structured patient education programme. And that it’s as important as maybe taking their medication as it has been prescribed” (Educator 8, X-PERT)

Educators described frustration with the lack of emphasis placed on promoting attendance at programmes, and the lack of standardisation in how education was promoted across Ireland:

“It can get quite frustrating, in diabetes there is so much really really good work going on around the country, but how we communicate it, and how we deliver it in a standardised way isn’t good enough – it could be so much better.” (Educator 1, CODE)

3.4 Supporting attendance: Healthcare professionals and the diabetes care pathway

3.4.1 The key role of healthcare professionals

Healthcare professionals were perceived to play a key role in attendance as the sole source of information for the majority of participants. Without the intervention of their healthcare provider,

participants described how it was unlikely they would have been aware of structured diabetes education.

“I was notified by my nurse, I didn’t go searching”

(Attendee 10, DESMOND and X-PERT)

“If I was left to my own devices I probably would have known nothing about the course”

(Attendee 8, X-PERT).

As well as increasing awareness of programmes, healthcare professionals could also encourage and highlight the benefits of attendance. As described by Attendee 11 (X-PERT): “I needed the push from the GP, I wouldn’t have gone otherwise, to be honest I wouldn’t have... once my doctor said it, that was good enough for me”.

Educators also highlighted the key role of healthcare professionals, and emphasised how attendance “needs to start with practice staff” (Educator 8, X-PERT) due to their trusted relationship with people with diabetes.

“I do think the GP and the practice nurse are the key people, for all of us, because we hold them as the gate keepers of our health care. So what they say in general really goes”

(Educator 14, X-PERT)

3.4.2 Education as supported and routine

Educators described how education needs to be embedded and supported as a routine part of diabetes care, with all healthcare professionals playing a role in increasing awareness and promoting attendance.

“If we [health professionals] were all sort of preaching off the same hymn book, if everybody was bringing it up that has contact with the patient, that this is what we highly recommend” (Educator 3, CODE)

Educators described how increased administrative support could result in improved attendance:

“Education really took off here when we had the right admin, she organises it and she phones up people and makes sure that she maximises the attendance” (Educator 6, X-PERT)

Educators also described innovative strategies, including the recent introduction of an online system for referral for the X-PERT programme, which could reduce the administrative burden and increase attendance.

“The referral process has been improved through the central online booking and the helpline. So that’s a massive improvement on the accessibility of referral. It cuts out paperwork for the admin as well at the other side” (Educator 7, X-PERT)

However, educators emphasised the need for healthcare professional buy-in for new innovations, including online systems, to be successful:

“the online, again without being critical of it, people aren’t going to take that up unless the GPs and the practice nurses on the ground know how to access it, and know how to promote it” (Educator 1, CODE).

Discussion

The present study explored attendees’ and educators’ experiences of attending and delivering structured diabetes education programmes, and barriers and facilitators to attendance. We identified four themes “Structured education: Addressing an unmet need”, “The problem of non-

attendance”, “Barriers to Attendance: Can’t Go, Won’t Go, Don’t Know and Poor System Flow” and “Supporting attendance: Healthcare professionals and the diabetes care pathway”. Our findings suggest two new categories of non-attendance, “Don’t Know” and “Poor System Flow” which build on the “Can’t Go” and “Won’t Go” categories previously identified in the literature (16). Although participants differed in the programmes attended or delivered, findings were similar across participants.

In relation to the two new categories identified in the current study, “Don’t Know” describes how lack of knowledge of the existence and benefits of structured diabetes education, both by people with diabetes and healthcare providers, can adversely impact on attendance. “Poor System Flow” describes how education is not embedded as a routine part of healthcare, resulting in lack of standardisation in promotion of programmes and inefficient administrative processes for sending invites and reminders.

A strength of the current study is that it integrates two previously unexplored perspectives, people who have attended and programme educators. By including attendees, we were able to build on a previous review (16) which focused on non-attendees, and to explore the positive experiences and interactions that led to attendance. Our study is an example of a positive deviance approach to health care research (23) which highlights the value of identifying individuals or organisations that demonstrate better outcomes than their peers, exploring the practices associated with improved outcomes and promoting the uptake of these practices by others within the community (24).

A limitation of our study is that people with Type 2 DM and educators who chose to take part may have had a particularly positive experience of structured diabetes education. Although saturation was reached within the pool of available participants, our response rates were 22% for attendees and 18% for educators and additional insights may have been identified from a more diverse sample. While the attendees in our study derived benefit from traditional in person group-based education, this may not reflect the experiences of all people with Type 2 DM. Previous research has indicated that there is a need for education programmes targeted to specific groups (25) with initial evidence that telemedicine/telehealth interventions may be particularly beneficial for medically underserved people with diabetes (26).

While we acknowledge that a one size fits all model of education may not be appropriate, our findings suggest that existing structured diabetes education does address an unmet need, and that there is much that can be done to improve attendance at existing programmes. Our findings suggest that strategies to improve attendance can be targeted at multiple levels. “Can’t Go” barriers such as timing and location of programmes, and conflicts with work, could be addressed by making programmes available after hours, or on the weekend. “Won’t Go” barriers could be addressed by highlighting the benefits described by attendees such as the reliability of the information the face to face reassurance from groups members and educators provided.

Our findings also highlight the key role of healthcare professionals in promoting attendance. Primary care providers with regular contact with people with diabetes may be particularly important in increasing awareness of the existence and benefits of education programmes to address the “Don’t Know” barriers identified in this study. Effectively promoting structured diabetes education requires that healthcare professionals are themselves aware of the existence

and benefits of programmes. Research has begun to explore GPs' hesitation to refer people with diabetes to programmes (Sunaert et al., 2011), but future research should further explore professional perspectives to inform how to emphasise the importance of structured diabetes education to healthcare professionals to support them in promoting education to people with Type 2 DM. Future research could also explore the perspectives of people with Type 2 DM who have been referred to programmes but subsequently do not attend for insights into non-attendance following referral. The development of taster sessions for healthcare professionals to attend, or the supply of materials to general practices on benefits, may be useful methods to promote attendance.

Our findings also suggest that we should avoid focusing solely on the attitudes of people with diabetes towards structured diabetes education but also consider "Poor System Flow" and the extent to which education is embedded and supported within routine care. The availability of resources, like administrative support, or innovations like online referrals may have potential to increase attendance. Viewing structured diabetes education as an optional extra, rather than best practice medical treatment, is a barrier to attendance. The lack of emphasis placed on education within the diabetes care pathway also reflects an international problem with a recent paper discussing the status of diabetes self-management education in Europe (27) concluded that diabetes education is not truly embedded in routine clinical care.

Our study demonstrates the importance of exploring healthcare challenges from multiple perspectives. Through seeking the perspectives of educators and attendees, our findings suggest that we should consider how structured diabetes education is embedded within routine care and the key role of healthcare professionals in promoting attendance. Making structured diabetes

education referral and attendance an easy and routine choice requires investment, resources and appropriate support and information for both people with diabetes and healthcare providers.

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Tables

Table 1: Characteristics of Attendees

Attendees (n = 12)		
Age	<50 years	2
	51-60 years	6
	61-70 years	1
	71+ years	3
Gender	Male	7
	Female	5
Years since diagnosis	< 1 year	5
	1- 5 years	1
	5-10 years	3
	10+ years	3
Programme attended*	CODE	6
	DESMOND	3
	X-PERT	4

*One participant attended both DESMOND and X-PERT programmes

Table 2: Characteristics of Educators

Educators (n = 14)		
Gender	Female	14
Programmed delivered	CODE	4
	DESMOND	4
	X-PERT	6
Years delivering	< 1 year	1
	1- 5 years	6
	6-10 years	7
Profession	Diabetes Nurse	5
	Dietician	9

Table 3: Themes and Sub-themes Identified

Themes	Sub-themes
Structured education: Addressing an unmet need	
The problem of non-attendance	
More than Can't Go, Won't Go: Don't Know and Poor System Flow	Can't Go, Won't Go: Practical Barriers and Attitudes Don't Know: Lack of knowledge of existence and benefits Poor System Flow: Limited resources and perceived importance
Supporting attendance:	The key role of healthcare professionals
Healthcare professionals and the care pathway	Education as supported and routine

Appendix A: Attendee Topic Guide

Topics to be explored: Below is a list of questions to be discussed in this study. The work will remain flexible with respect to participants' agendas but we will cover the main topics outlined below. It is common in semi-structured work to develop topics and questions as new ideas emerge from early data collection. Therefore, we may add new topics as the interviews progress and data collection continues. However, the key topic of exploring facilitators and barriers to attendance at structured education programmes in Ireland will remain the focus of the interview.

1. Experience of diagnosis of diabetes

- When/how was diabetes diagnosed?
- How did they feel about diagnosis/family reaction?
- Others reaction/friends/colleagues?
- What implications has the diagnosis of diabetes had for them?

2. Advice and help with diabetes at diagnosis

- What help and advice were they given by Health Care Professionals (HCP)
- Can they give an example of what was said/how delivered
- Did anyone else give help or advice, such as friends, family, work colleagues
- Can they give an example of what was said/how delivered
- What is their view on information received
- What helped the most or least? Can they give examples?
- Did they make any changes? If yes, what? If no, why?
- What services accessed since diagnosis? For example, eye screening, dietician, podiatrist?

3. Knowledge of structured education

- When were they told about structured diabetes education?
- Who told them?
- What information given? Were they told what it would cover, who would deliver it, who else would go?

4. Referral

- Did their HCP make a referral for them?
- If yes, why did they make the referral?/If no, why wasn't the referral made?
- If self-referred, how did they find out information about structured education?
- How easy/difficult was the referral process?
- Any other views on the referral?

5. **Attendance**

- What made them decide to go?
 - For example, HCPs advice?
 - Timing/location?
 - Group setting?
 - Content of sessions?
 - Work?
 - Travel issues?
- What are their main barriers to attending?
- What do they think could be done to remove the barriers?

6. **Views on structured education**

- What improved, give examples

7. **Recommendations for future patients who are newly diagnosed**

- What in their view is the ideal support/treatment for someone at diagnosis?
- What was good about the support and treatment they received/what could be improved on?

8. Do they have any personal recommendations to help others?

9. **Summary**

- Was there anything I left out?
- Anything else you would like to tell me

Appendix B: Educator Topic Guide

Topics to be explored: Below is a list of questions to be discussed in this study. The work will remain flexible with respect to participants' agendas but we will cover the main topics outlined below. It is common in semi-structured work to develop topics and questions as new ideas emerge from early data collection. Therefore, we may add new topics as the interviews progress and data collection continues. However, the key topic of exploring facilitators and barriers to attendance at structured education programmes in Ireland will remain the focus of the interview.

Knowledge and experience of structured education programme

- What is their experience of delivering structured education programmes
- What are the main features of their programme?
- What do they think the benefits of the course are?
- Do they think structured education improves outcomes for people living with diabetes?
- What do they think the limitations of the course are?
- How can health professionals be better informed re: content/purpose of structured education

1. Awareness of low attendance rates of structured education programme

- What do they think are the main reasons for low attendance?
- Do they think low attendance is a problem, if no why?
- What can be done to improve attendance rates?

2. Structured education programme referrals

- How are referrals made in their area?
 - Who informs patients?
 - What information given? If them, do they tell patients what it covers, who delivers it, who else can go?
 - How can the referral process be improved?
 - Do you require any specific training to be better able to promote referral/attendance?
 - Any other views on referral?
- Do they think the method of referral affects attendance rates?
- Are there other organisational factors affecting attendance?

3. Recommendations for future patients who are newly diagnosed

- What in their view is the ideal support/treatment for someone at diagnosis?

- What is good about the support and treatment their patients received/what could be improved on?
- How should education and support be best delivered, by whom?
- What are the current gaps in provision and support to help people with diabetes self-manage their condition?
- What other sources of information do you guide your diabetes patients to?
- Do they have any personal recommendations to help others?

4. **Summary**

- Was there anything I left out?
- Anything else you would like to tell me?

Appendix C: COnsolidated criteria for REporting Qualitative research (COREQ)

Checklist

No. Item	Guide questions/description	Reported on Page #
Domain 1: Research team and reflexivity		
<i>Personal Characteristics</i>		
1. Interviewer/facilitator	Which author/s conducted the interview or focus group?	Page 5
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	Page 5
3. Occupation	What was their occupation at the time of the study?	Page 5
4. Gender	Was the researcher male or female?	Page 5
5. Experience and training	What experience or training did the researcher have?	Page 5
<i>Relationship with participants</i>		
6. Relationship established	Was a relationship established prior to study commencement?	Page 5
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	Page 5
8. Interviewer characteristics	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	Page 5
Domain 2: study design		
<i>Theoretical framework</i>		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Page 6
<i>Participant selection</i>		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	Page 5
11. Method of approach	How were participants approached? e.g.	Page 4-5

	face-to-face, telephone, mail, email	
12. Sample size	How many participants were in the study?	Page 7
13. Non-participation	How many people refused to participate or dropped out? Reasons?	Page 7
<i>Setting</i>		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	Page 5
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	Page 5
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	Table 1 Table 2
<i>Data collection</i>		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	Appendix A Appendix B
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?	N/A
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Page 5
20. Field notes	Were field notes made during and/or after the interview or focus group?	Page 6
21. Duration	What was the duration of the interviews or focus group?	Page 7
22. Data saturation	Was data saturation discussed?	Page 5
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	Page 6
Domain 3: analysis and findings		
<i>Data analysis</i>		
24. Number of data coders	How many data coders coded the data?	Page 6
25. Description of the coding tree	Did authors provide a description of the coding tree?	Page 6
26. Derivation of themes	Were themes identified in advance or derived from the data?	Page 6
27. Software	What software, if applicable, was used to manage the data?	Page 6
28. Participant checking	Did participants provide feedback on the findings?	Page 6
<i>Reporting</i>		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each	Page 7-15

	quotation identified? e.g. participant number	
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Page 7-15
31. Clarity of major themes	Were major themes clearly presented in the findings?	Page 7-15
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Page 7-15